

09/770,770

WEST Search History

DATE: Tuesday, February 05, 2002

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side			result set
DB=USPT,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ			
L1	melting temperature\$1 near5 mismatch\$2 near5 probe\$1 near5 hybridiz\$	2	L1

END OF SEARCH HISTORY



Generate Collection

L1: Entry 1 of 2

File: USPT

Jul 14, 1998

US-PAT-NO: 5780233

DOCUMENT-IDENTIFIER: US 5780233 A 557,637

TITLE: Artificial mismatch hybridization

DATE-ISSUED: July 14, 1998

## INVENTOR-INFORMATION:

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APPL-NO: 8/ 659605 [PALM]

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INT-CL: [6] C12 Q 1/68, C07 H 21/04

US-CL-ISSUED: 435/6; 536/24.3, 536/24.33, 935/8, 935/77, 935/78

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FIELD-OF-SEARCH: 435/6, 435/91.2, 435/91.5, 935/77, 935/78, 536/23.1, 536/24.3, 536/24.33

PRIOR-ART-DISCLOSED:

## OTHER PUBLICATIONS

Iitia et al. Biotechniques 17(3):566-573 Sep. 1994.  
Bergstrom, et al., "Synthesis, Structure, and Deoxyribonucleic Acid Sequencing with a Universal Nucleoside: 1-(2'-Deoxy-.beta.-D-ribofuranosyl)-3-nitropyrrole," J. Am. Chem. Soc. vol. 17, No. 4: 1201-1209 (1995).  
Breslauer, et al., "Predicting DNA duplex stability from the base sequence," Proc. Natl. Acad. Sci. USA vol. 83:3746-3750 (1986).  
Conner, et al., "Detection of sickle cell .beta..sup.s -globin allele by hybridization with synthetic oligonucleotides," Proc. Natl. Acad. Sci. USA vol. 80:278-282 (1983).  
Doktycz, et al., "Optical Melting of 128 Octamer DNA Duplexes," The Journal of Biological Chemistry vol. 270:8439-8445 (1995).  
Ebel et al., "Very Stable Mismatch Duplexes: Structural and Thermodynamic Studies on Tandem G.cndot.A Mismatches in DNA," Biochemistry 31:12083-12086(1992).  
Ikuta, et al., "Dissociation kinetics of 19 base paired oligonucleotide-DNA duplexes containing different single mismatched base pairs," Nucleic Acids Research vol. 15:797-811 (1987).  
Loakes, et al., "5-Nitroindole as an universal base analogue," Nucleic Acids Research vol. 22:4039-4043 (1994).  
McGraw et al., "Sequence-Dependent Oligonucleotide-Target Duplex Stabilities: Rules from Empirical Studies with a Set of Twenty-Mers," Bio Techniques vol. 8:674-678 (1990).  
Milburn, Sue, Ph.D., "Purify mRNA Rapidly with High Yield," Ambion vol. 3:1-12 (1996).  
Nichols, et al., "A universal nucleoside for use at ambiguous sites in DNA primers," Nature, 369:492-493 (1994).

Wallace, et al., "The use of synthetic oligonucleotides as hybridization probes. II. Hybridization of oligonucleotides of mixed sequence to rabbit .beta.-globin DNA," Nucleic Acids Research vol. 9:879-894 (1981).  
Werntges, et al., "Mismatches in DNA double strands: thermodynamic parameters and their correlation to repair efficiencies," Nucleic Acids Research, vol. 14, No. 9:3773-3790 (1986).

ART-UNIT: 187

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ATTY-AGENT-FIRM: Quarles & Brady

ABSTRACT:

An improved nucleic acid hybridization process is provided which employs a modified oligonucleotide and improves the ability to discriminate a control nucleic acid target from a variant nucleic acid target containing a sequence variation. The modified probe contains at least one artificial mismatch relative to the control nucleic acid target in addition to any mismatch(es) arising from the sequence variation. The invention has direct and advantageous application to numerous existing hybridization methods, including, applications that employ, for example, the Polymerase Chain Reaction, allele-specific nucleic acid sequencing methods, and diagnostic hybridization methods.

5 Claims, 8 Drawing figures